

REMARKS

Claims 1-3, 17-19 and 21 are presented for consideration. Claims 1-3, 5-15, 17-19 and 21-52 are currently pending, of which claims 5-15 and 22-52 are withdrawn from consideration. No claim is currently amended. No claim is currently cancelled.

Claims 1-3, 17-19 and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. 5,131,077 to Indei, hereinafter Indei, and Applicant's admitted prior art in the background of the present specification.

Applicants conducted an interview with Examiner Qin and an Examiner's Supervisor to discuss some issues regarding the present invention and Indei. The Examiner's Supervisor suggested that it might be helpful if she and Examiner Qin reviewed the prior art anew, and then reschedule a second interview to discuss the issues still further. In the interim, it was suggested that Applicant file a response officially submitting the issues for consideration. Applicants are filing the present Office Action Response in accordance with the Examiners' recommendation, with the understanding that Applicant's will still have an opportunity to provide a more substantive response to the current Office Action after a forthcoming second interview.

Prior to the first aforementioned interview, Applicant had submitted an itinerary to Examiner Qin enumerating three items for discussion. For convenience, those three items are repeated below. First, however, Applicants will summarize some of the discussed issues, as understood by Applicant.

First is the question of what element in the Indei reference is being identified as the claimed "interface device" external to the claimed printing apparatus. Examiner Qin agreed that Indei's printer control device 5a is cited as the claimed interface device, but suggested that the printer control device 5a could be interpreted as also being within the printing apparatus. Applicants noted that the claim language restricts the interface device to being external to the printing apparatus, and therefore Indei's printer control device 5a must be restricted to being external to Indei's printer 5b. This is important because Indei teaches that his printer control device 5a (i.e. the interface device) generates a usage record file that tracks usage of printer 5b by the various work stations 2/3 (i.e. host devices),

and Indei teaches backing up this usage record file to one of either a file server 6 on the his network, a mail server 7 on his network, or a storage memory 56 within the printer control device 5a, itself.

Applicants noted that the claim language requires that the backup memory be located within the interface device, and thus precludes the backing up of Indei's usage record file to Indei's file server 6 or mail server 7, but conceded that the use of storage memory 56 did touch on this aspect of the claim language.

Nonetheless, the main point is that Indei does not teach or suggest backing up printer settings data from a printer to an external interface device, as is required by the claimed invention. The data that Indei backs up is data generated outside the printer 5b (i.e. generated within the printer control device 5a) and backed up within the same device that generated it (i.e. backed up within the interface device) with no update commands or requests required from the printer 5b (i.e. Indei's printer control device 5b decides for itself when to back up its own data based on its own time schedule).

Examiner Qin suggested that if Indei's interface device (printer control device 5a) were to be combined with Indei's printer 5b to create a composite printing apparatus (i.e. printer server 5), then the data being backup up would have been generated within the composite printing apparatus 5. It was pointed out that if printer control device 5a were to made an internal part of a printing apparatus, then the printer control device 5a could no longer be interpreted as an interface device, and thus would no longer read on the claimed interface device external to the printing apparatus. In other words, Indei's printer control device 5a cannot simultaneously be external to the printing apparatus (thus being an "interface") while also being internal to the printing apparatus (thus being a memory store within the printing apparatus).

Furthermore, if Indei's printer control device 5a were internal to the claimed printing apparatus, it still would not read on the claimed invention since then the resultant printing apparatus would be backing up a user record file from a first internal memory location (within printer control device 5a) to a second internal backup memory location (within printer control device 5a). Furthermore, it is clear that the information being backup up could not read on the claimed setting data

since if the setting data is corrupted, then the printer would cease to function and thus not be able to execute the memory restore function.

Examiner Qin then suggested that Indei's printer control device 5a might remain external to Indei's printer 5b, but the printer's control device's primary memory 18 might be transferred to printer 5b. In response, it was pointed out that Indei does not show storing the printer control device's usage record file to a memory in printer 5b, or suggest that the printer control device 5a has any kind of direct access to memory within printer 5b. It was suggested that it is improper to read more into a reference than is reasonably shown. Nonetheless, it was pointed out that even if such an alternation were permissible, the resultant structure would still not read on the present invention since the relocated memory would still hold data generated outside the printer (i.e. within printer control device 5a) and thus not hold, or backup up, printer settings data.

Another point of contention regards the claim limitation requiring that the claimed printing apparatus receive commands from the host device through the interface device. The Office Action notes that Indei's Fig. 1 shows that printer control device 5a has a file r/w control section to communicate with a host, and that Indei's column 3, lines 27-37 is an embodiment of Indei's backup control device. Applicants respectfully point out that the claim language requires that the interface relay command data from a host device to the printing apparatus, while the noted citation merely states that the interface device is in communication with a host device. It is also noted that cited col. 3, lines 27-37 states that the embodiment permits the printer control device to backup its own usage record file, but is silent on any relaying of commands from a host device to printer 5b. Specifically, col. 4, lines 27-30 state,

"The use of printer control device 5a organized in this manner insures that important data such as billing data for charges for the use of the printer, user profile data, and confidential data may be reliably handled."

By contrast, Applicants contend that Indei teaches against printer 5b receiving commands from a host device. Indei teaches that print requests are sent from a work station 2/3 (i.e. host device) to printer control device 5b, but the actual print commands are generated and sent from printer control device 5a to printer 5b. This is true of all print servers since their job is to manage print requests and to

isolate a host device from the details of communicating with a network printer. This is explained, for example, in Indei, col. 2, lines 57-59 and Indei col. 3, lines 14-26.

It is further noted that in the "Response to Arguments", the Office Action asserts that,

"the Office's stance is that of the Indei reference discloses a printer and a print control device in Fig. 2, item 5. One can see the various modifications and modules of the device in the other figures. However, the applicant's invention essentially is a rearrangement of the various modules. Compare, for example, Fig. 1 of the applicant's drawings with Figs. 3 and 8 (the print control device and the backup device for the print control device) of Indei. Both essentially disclose the same part (e.g. cpu, memory and backup memory, communications devices)."

Applicants respectfully point out that Fig. 3 shows only printer control device 5a and does not show any backup device for the printer control device 5a. However, Fig. 8 does show both the printer control device 5a and backup device 56. Nonetheless, neither Fig. 3 nor Fig. 8 show a printer.

This is important since Applicant's Fig. 1 (to which Indei's Figs. 3 and 8 are being compared) shows both a printer (i.e. printing apparatus 101) and interface device 131. Furthermore, in applicant's Fig. 1, the cited cpu and memory (which the Office Action alludes to) are found only in printing apparatus 101, and not found in interface device 131. Assuming that one could, as the Office Action seems to suggest, remove the cpu and memory from Applicant's printing apparatus 101 and incorporate them into interface device 131, then Applicant's printer 101 would cease to function since it would no longer have any control circuitry. Furthermore, if one were to move backup memory 135 from Applicant's interface device 131 to Applicant's printing apparatus 101, then Applicant's invention would again cease to function since the problem that is being solved is how to recover the printing apparatus from a state where its settings data is corrupted causing its circuit board to be nonfunctional. If the circuit board is nonfunctional, then the printer cannot access the backup memory on the circuit board. Additionally, Applicants point out that since neither of Indei's Figs. 3 or 8 show a printer (and thus show no internal components of a printer), it is not clear what is the relevance of comparing the

internal structure of Indei's interface device 5a with the internal structure of Applicant's printing apparatus 101. The internal components of Applicants interface device 131 are shown in Applicant's Fig. 1, but the Office Action appears to be comparing Indei's printer control device 5a with Applicant's printing apparatus 101 and not with Applicant's interface device 131.

For convenience, the aforementioned three items of discussion previously submitted in anticipation of the aforementioned first interview are rested as follows:

ITEM 1

The Response to Arguments section is not clear. In a previous Office Action response, at the request of the Examiner, Applicants amended the claims to make it clear that the claimed interface device is external to the printing apparatus, but a subsequent Office Action (and the current Office Action, as well) appear to ignore this limitation.

The Response to Arguments section of the present Office Action repeats a previous comparison of Indei's Figs. 3 and 8 with Applicant's Fig. 1. The response notes that Figs. 3 and 8 show a "cpu, memory and backup memory, communication devices", but ignore the fact that both Figs. 3 and 8 show Indei's printer control device 5a and do not show a printer (or printing apparatus). By contrast, Applicant's Fig. 1 shows both a printer (i.e. printing apparatus) and the claimed interface device.

The Office Action appears to have taken the position that Indei's printer control device 5a reads on Applicant's interface device, which would require these two elements be compared directly. However instead, the Office Action chooses to compare Indei's control device 5a with a combination of Applicant's printing apparatus and interface device (Fig. 1), while ignoring Indei's printer 5b.

It would appear that the Office Action is taking the position that a selective combination of elements from Indei's printer 5b, printer control device 5a, and file-server 6/ mail-server 7 to replicate the present invention is essentially an obvious rearrangement of various modules.

While Applicant agree that a general rearrangement of elements would not constitute an invention (*if* no added benefit is obtained from the rearrangement),

Applicants contend that the presently claimed invention is not a simple rearrangement of elements. In the current case, the invention would not function if it were to be rearranged as suggested by the Office Action. As has been explained before, the present invention permits a nonfunctioning printer to be repaired automatically by reloading the printer's setting data (which are typically provided at the factory). The prior art section explains that when a prior art printer cannot recover from a malfunction, the printer's setting data needs to be restored, but that since settings data is internal to the printer, the only way to recover the settings data is to physically replace the printer's control board. If the backup memory holding backup settings data were internal to the printer (which would require that it be on the printer's control board since it is the only circuit board within the printer), the printer would not be able to access it since the printer's control board is nonfunctional. The present invention therefore requires that the backup settings data be maintained external to the printer in the interface device that connects the printer to a host device. If the interface device is made internal to the printer, as suggested by the Office Action, then the present invention would not be able to restore the printer's corrupted settings data and recover the printer from the malfunction.

Item 2

On a related note, the Office Action concedes that Indei shows a printer server comprised of the printer control device 5a and the printer 5b. Indei further makes it clear that the information being backed up is information gathered by the printer control device 5a, and generally consists of a usage record file of who has used the printer and how much each user has used the printer (for purposes of charging users on a per-use basis). Applicant's had previously noted that by contrast, the present invention requires that settings data within the printer, not information with the interface device, be backed up. The Office Action had previously put forth the position that it was within its prerogative to combine Indei's printer control device 5a with Indei's printer 5b and to equate the resultant printer server to the claimed printing apparatus. Consequently, since the usage record file generated by the printer control device 5a would be internal to the

resultant print server, one could interpret the usage record file as being internal to the printing apparatus.

In order to avoid confusion, Applicants agreed to amended the claims to more clearly limit the interface device to being external to the claimed printing apparatus, in accordance with the Examiner's recommendation. Thus, Applicant's contend that the continued equating of Indei's usage record file generated outside the printer (within the printer control device 5a) with setting data maintained inside Applicant's printing apparatus (not the interface device) is not proper.

Item 3

The current Office Action appears to overlook several claim limitations, as follows:

CLAIMs 1/17

- 1) A printing apparatus connected to an **external** interface device
- 2) the "rewritable, nonvolatile, primary data memory unit" is inside the printer, **not** inside the interface device, as is asserted by the Office Action.
- 3) The printer's "receiver" receives command data from "a host device" through the external interface device. This is in direct contradiction to Indei which requires that print requests be sent from a host device to his interface device (i.e. printer control device 5a), and this interface device generates the print commands that are sent to the printer. Indei's printer 5a does not receive any commands from Indei's host device.
- 4) The "data protection unit" backup up setting data from **within** the printer **to** the interface device **external** to the printer. By contrast, Indei requires that information (i.e. usage record data) within his interface device (i.e. printer control device 5a) be backed up to a file-server, a mail-server, or within the interface device itself. Indei can have his backup memory within the same printer control device 5a (interface device) that generates the usage record data because the information being saved is a user record file, and does not affect the functionality of the printer control device 5a (or printer 5b).

CLAIM 2/18

These claims require that the copying of protected data from the printing apparatus to the interface device be "fully under control of the printing apparatus." This wording was also the result of a previous interview with the Examiner, in which it was noted that because the present interface device is in reality a cable, it does not have data processing capabilities and thus cannot generally manage the updating of the backup memory encased within the cable. During the interview, it was decided to add wording to the claims stating the actual copying sequence is under full control of the printing apparatus. However, the present Office Action appears to have equated the requesting of a data backup operation with the act of actually fully controlling the transfer of data (i.e. selection of address lines, latching in of input data, application of appropriate programming/erasing voltages, etc.) that are involved in fully controlling a data transfer to/from a nonvolatile memory.

Applicants look forward to discussing the items raised in this Office Action Response with the Examiner.

Applicants respectfully request favorable reconsideration of the present application.

Respectfully submitted,

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